can curve outwardly away from each other to blend with intermediate opposing side walls adjacent the conduits **30**, and to correspond generally to the shape of the filter element **80**.

Each of the supports **71, 72** includes an upper portion **73***a* and a lower portion **73***b* fastened together with screws **74**. As is best seen in cross-section in FIG. **7**, each upper portion **73***a* has a flange **78***a* that extends alongside a corresponding flange **78***b* of the lower portion **73***b*, clamping an edge of the wall **75** of the filter housing **70** therebetween. In other embodiments, the supports **71, 72** can include other arrangements for supporting the housing **70**. The lower portion **73***b* of the lower support **72** has a closed lower surface **67** that forms the base of the filter housing **70**. The upper portion **73***a* of the lower support **72** and both the upper and lower portions of the upper support **71** have open upper surfaces that allow the filter housing **70** to extend upwardly therethrough, and allow the filter element **80** to drop downwardly into the filter housing.

Returning to FIG. **6**, the upper and lower supports **71, 72** each have conduit apertures **77** sized to receive the straight sections **36**. In one embodiment, the conduit apertures **77** are surrounded by flexible projections **69** attached to the lower portions **73***b* of each support **71, 72**. The projections **69** clamp against the straight section **36** to restrict motion of the straight sections **36** relative to the supports **71, 72**. In a further aspect of this embodiment, the projections **69** of the upper support **71** have circumferential protrusions **68** that engage a corresponding groove **41** of the straight section **36** to prevent the straight section **36** from sliding axially relative to the upper support **71**.

The upper and lower supports **71, 72** also include handle apertures **76** that receive a shaft **47** of the handle **45**. The lowermost aperture **76***a* has a ridge **79** that engages a slot **44** of the handle shaft **47** to prevent the shaft from rotating. The handle **45** includes a grip portion **48** which extends upwardly beyond the filter housing **70** where it can be grasped by the user for moving the vacuum cleaner **10** (FIG. **1**) and/or for rotating the filter housing **70** and the conduits **30** relative to the airflow propulsion device **200**, as was discussed above with reference to FIG. **2**. The grip portion **48** can also include a switch **46** for activating the vacuum cleaner **10**. The switch **46** can be coupled with an electrical cord **49** to a suitable power outlet, and is also coupled to the fan motor **250** (FIG. **3**) and the brush motor **42** (FIG. **2**) with electrical leads (not shown).

The upper support **71** includes two gaskets **57** for sealing with the manifold **50**. In one embodiment, the manifold **50** is removably secured to the upper support **71** with a pair of clips **60**. Accordingly, the manifold **50** can be easily removed to access the filter element **80** and the spare belt or belts **141***a*. In another embodiment, the manifold **50** can be secured to the upper support **71** with any suitable releasable latching mechanism, such as flexible, extendible bands **60***a* shown in hidden lines in FIG. **6**.

FIG. **8** is an exploded isometric view of a manifold **50***a* in accordance with another embodiment of the invention. The manifold **50***a* includes a lower portion **51***a* connected to an upper portion **52***a*. The lower portion **51***a* has an outlet port **59** with an elliptical shape elongated along a major axis. Flow passages **54***a* couple to the outlet port **59** toward opposite ends of a minor axis that extends generally perpendicular to the major axis. The flow passages **54***a* are bounded by an upward facing surface **55***a* of the lower portion **51***a* and by a downward facing surface **56***a* of the upper portion **52***a*, in a manner generally similar to that discussed above with reference to FIG. **6**.

From the foregoing it will be appreciated that, although specific embodiments of the invention have been described herein for purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the invention is not limited except as by the appended claims.

What is claimed is:

1. A vacuum cleaner, comprising:

an intake body having an intake opening configured to be positioned proximate to a floor surface for receiving a flow of air and particulates;

a filter element for separating the particulates from the flow of air;

at least one conduit coupled between the intake body and the filter element; and

an airflow propulsion device coupled between the intake opening and the at least one conduit to draw the flow of air and particulates through the intake opening and toward the filter element, wherein the intake opening, the propulsion device and the conduit define a flow path for the flow of air and particulates and the flow path has an approximately constant flow area from the intake opening to the propulsion device.

2. The vacuum cleaner of claim **1** wherein the airflow propulsion device includes a rotatable fan coupled to an electric motor, the fan having a hub and a plurality of vanes extending radially outwardly from the hub, the hub and vanes being rotatable relative to the intake body to move the flow of air and particulates along the flow path.

3. The vacuum cleaner of claim **1** wherein the intake opening has an intake flow area and the conduit is a first conduit, further comprising a second conduit spaced apart from the first conduit, a combined flow area of the two conduits being less than the intake flow area.

4. The vacuum cleaner of claim **1**, further comprising a manifold having a first opening coupled to the at least one conduit and a second opening configured to be in fluid communication with the filter element, the manifold having a first flow area proximate to the first opening and a second flow area proximate to the second opening, the second opening being larger than the first opening to reduce a velocity of the airflow passing through the manifold.

5. The vacuum cleaner of claim **1** wherein the intake opening has a width of approximately 16 inches.

6. The vacuum cleaner of claim **1** wherein the intake opening has a width of approximately 20 inches.

7. The vacuum cleaner of claim **1** wherein walls of the flow path are generally smooth.

8. The vacuum cleaner of claim **1** wherein a minimum curvature of the flow path is equal to or greater than approximately 0.29 inches.

9. The vacuum cleaner of claim **1** wherein the at least one conduit has a generally upright portion with an approximately constant flow area that is less than the flow area at the intake opening.

10. The vacuum cleaner of claim **1** wherein the propulsion device has an entrance opening with a generally circular cross-sectional shape and the intake opening has a generally rectangular cross-sectional shape.

11. A vacuum cleaner, comprising:

an intake body having an intake opening configured to be positioned proximate to a floor surface for receiving a flow of air and particulates from the floor surface;

a filter element for separating the particulates from the flow of air;

at least one conduit coupled between the intake body and the filter element; and

an airflow propulsion device coupled between the intake opening and the at least one conduit, wherein the intake opening, the propulsion device and the conduit define a flow path, the flow path having an approximately constant flow area from the intake opening to the propulsion device, the flow path from the intake opening through the propulsion device having a radius of curvature not less than approximately 0.29 inches to provide smooth flow along the flow path.

12. The vacuum cleaner of claim **11** wherein the airflow propulsion device has an entrance opening for receiving the flow of air and particulates and an exit opening for exiting the flow of air and particulates, further wherein the flowpath changes direction by approximately 90° between the entrance opening and the exit opening.

13. The vacuum cleaner of claim **11** wherein the airflow propulsion device includes a rotatable fan coupled to an electric motor, the fan having a hub and a plurality of vanes depending from the hub, the hub and vanes being rotatable relative to the intake body to move the flow of air and particulates along the flow path.

14. The vacuum cleaner of claim **11**, further comprising a manifold having a first opening coupled to the at least one conduit and a second opening configured to be in fluid communication with the filter element, the manifold having a first flow area proximate to the first opening and a second flow area proximate to the second opening, the second flow area being larger than the first opening to reduce a velocity of the airflow passing through the manifold.

15. The vacuum cleaner of claim **11** wherein walls of the flow path are generally smooth.

16. The vacuum cleaner of claim **11** wherein the at least one conduit includes a generally horizontal portion, a generally vertical portion and a transition portion between the horizontal and vertical portions, the flow path through the transition portion having a minimum radius of curvature of approximately 0.29 inches.

17. A vacuum cleaner, comprising:

an intake body having an intake opening for receiving a flow of air and particulates, the intake body further having at least two exit openings;

a filter element to separate the particulates from the flow of air;

at least two conduits, each having a first aperture coupled to one of the exit openings of the intake body and a second aperture in fluid communication with the filter element; and

an airflow propulsion device coupled between the intake opening and the exit openings for moving the flow of air from the intake opening to the filter element.

18. The vacuum cleaner of claim **17** wherein the intake opening has an intake flow area and the conduits each have a conduit flow area, the sum of the conduit flow areas being less than the intake flow area to accelerate the flow through the conduits.

19. The vacuum cleaner of claim **17** wherein the conduits have generally smooth internal surfaces.

20. The vacuum cleaner of claim **17** wherein the conduits extend in generally straight parallel lines on opposite sides of the filter element.

21. The vacuum cleaner of claim **17** wherein a portion of each conduit extends outwardly from opposite sides of the intake body.

22. A vacuum cleaner, comprising:

an intake body having an intake opening configured to be positioned proximate to a surface for receiving a flow of air and particulates, the intake body further having at least two exit openings for simultaneously directing the flow of air and particulates out of the intake body;

a filter element for separating at least some of the particulates from the flow of air and particulates;

at least two conduits in fluid communication with the intake body and the filter element; and

an airflow propulsion device for moving the flow of air and particulates from the intake opening to the filter element.

23. The vacuum cleaner of claim **22** wherein the airflow propulsion device is coupled between the intake opening and the conduits.

24. The vacuum cleaner of claim **22**, further comprising a brush proximate to the intake opening, the brush having an arrangement of bristles that is symmetric about a symmetry plane.

25. The vacuum cleaner of claim **24** wherein the brush is rotatably mounted proximate to the intake opening and is rotatable relative to the intake opening.

26. The vacuum cleaner of claim **22**, further comprising a manifold between the conduits and the filter element, the manifold including a first portion coupled to a first conduit and a second portion coupled to a second conduit.

27. The vacuum cleaner of claim **22** wherein a first conduit extends independently of a second conduit from the intake body to the filter element.

28. The vacuum cleaner of claim **22** wherein the conduits do not merge until they approach the filter element.

29. The vacuum cleaner of claim **22** wherein one conduit is in fluid communication with each of the at least two exit openings.

30. A vacuum cleaner, comprising:

an intake body having an intake opening configured to be positioned proximate to a floor surface for receiving a flow of air and particulates, the intake body having a lower surface proximate to the floor surface and a vent for exhausting cooling flow for cooling a component within the intake body;

a filter element for separating the particulates from the flow of air;

a flow channel coupled between the intake body and the filter element; and

at least one wheel coupled to the intake body and projecting below at least a portion of the lower surface of the intake body to elevate the portion of the intake body above the floor surface, the wheel being positioned in a path of the cooling air passing outwardly through the vent to diffuse the cooling air.

31. The vacuum cleaner of claim **30** wherein the intake body has a forward edge and a rear edge opposite the forward edge, further wherein the wheel is a rear wheel positioned proximate the rear edge of the intake body.

32. The vacuum cleaner of claim **30** wherein the vent is an exhaust vent and the intake body has an intake vent spaced apart from the exhaust vent for receiving the cooling air.

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